WHIRRAKEE

October 2001 Vol. 22 No. 9

Registered by Australia Post. Publication No. VBH4462

MONTHLY NEWSLETTER OF THE BENDIGO FIELD NATURALISTS CLUB

Bendigo Field Naturalists Club Inc.

Address for correspondence: PO Box 396, Bendigo 3552

Office Bearers for 2001 - 2002

President	Barbara Pelczynska	Melaleuca Ave, Longlea	5439 3075
Senior Vice President	Matthew Comer	46 Railway Place, Goornong	5432 2380
Junior Vice President	Darren Green		
Secretary	Bill Holsworth	13 Nabilla Crs, Bendigo	5443 4063
Minute Secretary	Jane Cleary	24 Goynes Road, Epsom	5448 4396
Treasurer	Glenise Moors	Mandurang South Rd. Sedgwick	5439 6254
Membership Officer	Kate Lottkowitz	80 Piccaninny Rd, RSD Strathfieldsaye	5439 3157
Excursion organiser	John Green		5443 6756
Syllabus organiser	Rod Orr	2 Cockerel Court, Bendigo	5443 5668
Librarian	Diana Collier	31 Milroy Street, Bendigo	5443 0137
Garden Secretary	Barbara Pelczynska	Melaleuca Ave, Longlea	5439 3075
Hall Management	Maurie Lewis		0407 427179
Whirrakee contacts	Tom Burton	Tannery Lane, Mandurang	5439 3028
	Sabine Wilkens	82 Somerville Street, Bendigo	5443 2797
		e-mail: s.wilkens@bendigo.latrobe.edu.au	

Membership of the Bendigo Field Naturalists Club is open to all those interested in Natural History. The subscription rates are: Single $34; Family $40; Concession: Single $28.50; Family $34. *Whirrakee* subscription only is $34. These rates include GST.

General meetings are held on the second Wednesday of each month. The venue for General meetings is the Golden Square Senior Citizens Building, Old High Street, Golden Square. Meetings start at 7:30pm and conclude with supper. The Annual Meeting is held in September.

Committee meetings are held on the third Wednesday of each month at 7:30pm. Members of the Committee are the Office Bearers listed above, together with the following members:
Kate Lottkowitz; Trevor Marshall; Rob Moors, Jan Orr, Stan Pelczynski; Bob Ruddick

Excursions The assembly point for excursions is the Golden Square Senior Citizens Building, unless otherwise specified. Full-day excursions normally commence at 10am (usually on a Sunday); half-day excursions normally commence at 2pm and may be either on a Saturday or Sunday. Full-day or half-day excursions are usually held on the weekend following the General Meeting. Campouts are held several times each year, usually coinciding with long weekends or holiday periods.

The Bendigo Field Naturalists Club has one active sub-group:

Mammal Study Group: meets on the fourth Wednesday of the month at 7:30pm in the Golden Square Senior Citizens Building.

Chairman: John Burtonclay, Fadersons Lane, Mandurang (5439 5710)
Secretary: Bill Holsworth, 13 Nabilla Crs., Bendigo (5443 4063)
Equipment Officer: Maurie Lewis (0407 427179)

Front Cover: Photographer: Rosemary Glaisher

This photo shows Hilary Glaisher, one of the younger members of the mammal box checking team, making her descent after inspecting a box for the presence of sugar gliders or tuans. Tuans were found on that checking trip, which would have made it fairly unforgettable for those present.
A summary report of the six-week long Spring Gully box checking effort can be found on page 3. Sometimes unexpected inhabitants are found, e.g. bees or birds. I once attended such an occasion when Chris Tzaros had to virtually fall off the ladder to escape some angry bees.....fairly unforgettable in a different sense!

WHIRRAKEE

Monthly Newsletter of the Bendigo Field Naturalist Club

Vol. 22, No. 9, October 2001

Whirrakee takes its name from the Whirrakee Wattle (*Acacia williamsonii*) which is virtually endemic to the Bendigo region

CONTENT

Item	Contributor	Page
Nest box checking at Spring Gully in May 2001	Maurie Lewis	3
Leonid Meteor Shower	Tony Morris	3
Report from Spring in the Bendigo Bush events	Barbara Pelczynska	4
Plants Flowering in the BFNC Garden	Matthew Comer	4
....More News from the BFNC Garden	Barbara Pelzcynska	5
Adopt-a-Highway Program....Highway Clean-up	Matthew Comer	5
How much native vegetation is enough?	Jim Radford	6
Wellsford Forest Habitat Tree Survey	Wellsford Watch Action Group	8
Report from the AGM	Sabine Wilkens	12
Annual Report of BFNC	Bill Holsworth	12
VFNCA Camps October 2001 and March 2002		14

Authors are responsible for the accuracy of the information they use and also for any opinions expressed in their articles.
Contributions will be included as soon as possible after they are received, although articles received more than one week after the monthly General Meeting will probably be too late for inclusion in the next issue of *Whirrakee*.
Articles in *Whirrakee* may be reproduced, but permission should be obtained from the Bendigo Field Naturalists Club, and acknowledgment should be given to the author and the Club. Some back issues are still available on request.

Editors' Note
We clean forgot to remind you that the membership fees were due last month...and now you are all one month behind in your payment! Please pay as soon as possible but definitely before Christmas (otherwise the Whirrakee will be suspended).
Thank you very much to all those who attended the Annual General Meeting and agreed to continue with the present position or accept a new one. Any coercion that might have occurred happened in good humour!! Appreciation was expressed to everybody who helps in the running of the Club in the Secretary's Annual Report (see page 12) but the Whirrakee folding team, Rod and Jan Orr, Barbara Pelczynska and Stan Pelczynski, Elaine Mathison, Hal Moors and Bill Ruddick plus occasional other helpers deserve a special mention and thank you. Also thanks to everybody who helped make the Wildflower Show another successful event....see page 4 for a report of this and two other successful 'Spring in the Bendigo Bush' events.
Well, the new excursion officer, john Green, did not muck around and has planned two excursions for this month already, Friday after the General Meeting (to the Whipstick) and Sunday 28th October (to Melvilles Caves). See Diary page for details.

Mammal Survey of Spring Gully Nest Boxes

from Maurie Lewis

Starting in the first week in May this year, a group of mammal enthusiasts went out to the Spring Gully area every weekend for six weeks to check the nest boxes installed there. Overall 120 boxes were checked over six sites and the following were found:
Tuans: 3 (2 females, 1 male)
Sugar Gliders: 41
Owlet Night Jars: 5
Members that went out every week were John Burtonclay, John Green, Kerrie Norris and Maurie Lewis, other volunteers joined in on some weekends. Thanks to all.....what an encouraging result.

A tuan found during the nest box inspections. What a privilege to see such an animal close-up. Photographer: Rosemary Glaisher

---

Leonid Meteor Showers

Author: Tony Morris

4.31 am Eastern Australian Summer time on Monday 19 November, 2001 is the time to see a possible meteor storm.

Earth will slip across another thicker patch of in the Leonids dust trail at 5.19 am but observers out near the Western Australia - South Australian border will be better positioned to see what may possibly be an even better "storm". These times may be adjusted closer to the event but probably by minutes only.

The moon will be out of the sky, hopefully the weather will be fine and although it will be a Monday, it may very well be the best opportunity for many years to be "up at the bow" (just before dawn) as this little ball we call home sails majestically through a thicker section of a "dust trail"!

The tiny fragments of material incandesce several tens of kilometres above ground as they are friction-heated by the thin upper layers of our atmosphere. Many are zipping along at 71 kilometres per second with respect to the earth.

Once they have braked ever so rapidly, the terminal phase of their vertical descent through the lower, denser layers of air is at a speed of probably less than 150 metres per second.

Large iron meteorites such as that which produced the Wolfe Creek meteorite crater in the Tanami Desert (880 metres wide by 49 metres deep) punched right through the earth's atmosphere.

View the moon through a medium power telescope and you will see a well-preserved record of many thousands of meteorite impacts.

Ideally you should be out, well away from any lights at all, with a clear view down to the horizon in the north-east.

Set your eyes on "soft focus" and look into the north-eastern sky roughly half way between the horizon and the zenith (overhead).

Give your pupils at least twenty minutes to open to maximum aperture and avoid any light once your pupils have dilated.

You might see a meteorite as spectacular as that which fell near Murchison some thirty years ago. If you do see a really bright "fireball", note its precise time and the azimuth and elevation. If a meteorite or pieces of one land in open ground such as pasture, a crop or a ploughed field, it may be very easy to locate.

Write this date and time in your diary. It could well be a fiery few minutes in our skies.

Spring in the Bendigo Bush

Report by Barbara Pelczynska

During the Spring in the Bendigo Bush month our Club sponsored several activities.
The three activities described below have been particularly successful.

1. Wildflower Show, Saturday 1st and Sunday 2nd September, 2001.

The Wildflower Show was presented jointly by our Club and the Bendigo Native Plant Group. It was opened by Jacinta Allan, MP, and attended by 446 people. The flora on display came from members of Bendigo Native Plant Group and the Goldfields Nursery. The specimens represented the great diversity of Australia's native plants and in particular of the plants indigenous to our local Box-Ironbark Forest.

The visitors to the show were also greatly impressed with the Club's indigenous garden.

The organisers of this event should be congratulated for their achievement.

This year's Wildflower Show has been a great start to the first spring of the 21st century in Bendigo.

2. "Beauty of Nature" Exhibition of Paintings of Birds by Kunchana Pradodh Dayaratna

8th to 28th September, in Penfolds Fine Arts Gallery

The exhibition was opened by Jacinta Allan on Friday 7th of September. It was attended by many people. Apart from promoting the local avifauna the exhibition gave Kunchana the opportunity to sell quite a number of his paintings.

3. "Aboriginal Legacies in the Landscape" A public Lecture given by John Morieson.

Wednesday, 5th September, 2001.

John 's lecture was on the legacies in the landscape of Aboriginal occupation, such as scarred trees, stone fish traps, ground ovens, griding groves , ring trees.

John has been researching these culture remainders of the past millennia and presented a number of illustrated examples in his talk. He also has shown the five different kinds of wells which he has seen at Kooyoora State Park. He has written about these wells in the most recent edition of Work on Paper.

John's lecture was attended by 70 people.

Plants flowering in the BFNC garden in September

Author: Matthew Comer

The spring flowering is continuing in the garden. Five of the Acacias in the garden have almost finished flowering but one, the Grey Mulga (*A. brachybotra)* is just coming into full bloom so there will be wattle blossom in the garden for some time yet.
Other notable plants flowering at this time include Bendigo Wax (*Philotheca verrucosa*), which continues its long flowering period. The Cypress Daisy Bush (*Olearia teretifolia*) is also covered in flowers. It has been spectacular in parts of the Wellsford forest in recent weeks. The Flax lily (*Dianella revoluta)* just near the entrance is covered in flower buds which are just starting to open. The Hop Bush (*Dodonaea viscosa* ssp. *cuneata)* at present is covered in its colourful fruits.
Other plants flowering at this time are as follows:

Acacia acinacea	Gold Dust Wattle
Acacia aspera	Rough Wattle
Acacia ausfeldii	Whipstick Cinnamon Wattle
Acacia pycnantha	Golden Wattle
Acacia williamsonii	Whirrakee Wattle
Bracteantha viscosa	Sticky Everlasting
Chrysocephalum apiculatum	Common Everlasting
C. semipapposum	Clustered Everlasting
Correa sp.	
Daviesia ulicifolia	Gorse Bitter Pea
Eucalyptus polyanthemus	Red Box
Grevillea alpina	Cats Claws
Grevillea rosmarinifolia	Rosemary Grevillea
Hakea decurrens	Silky Hakea
Hardenbergia violacea	Sarsparilla
Kennedia prostrata	Running Postman
Minuria interrigima	Smooth Minuria
Pimela humilis	Common Rice Flower
Pomaderris racemosa	Inland Pomaderris
Prostanthera aspalathoides	Scarlet Mint Bush
Prostanthera denticulata	Rough Mint Bush
Themeda triandra	Kangaroo Grass
Westringia crassifolia	Whipstick Westringia
Westringia eremicola	Slender Westringia

.....More News from the Bendigo Field Naturalists Garden

Author: Barbara Pelczynska

In July and August we had very successful garden working bees. We have extended the garden to the Fire Brigade fence, planted 450 new plants and weeded and cleaned the garden for the Wildflower Show. During the Show many visitors remarked how impressed they were with the garden. Some people remembered the bare, weedy garden when we started 6 years ago. I can only hope that at least some people will now grow indigenous plants in their own gardens.

I am told that Bendigo Wax used to be a very prolific plant around Bendigo. So much so that people from Melbourne would come on a special train called the "Bendigo Wax Train" and collect buckets of it to take home. Sadly the Bendigo Wax is now replaced with sprawling exotic gardens.

The following plants were planted during the July and August Working bees:

Chrysocephalum apiculatum	Common Everlasting
C. semipapposum	Clustered Everlasting
Arthropodium strictum	Chocolate Lily
Bracteantha viscosa	Sticky Everlasting
Dianella revoluta	Flax Lily
Glischrocaryon behrii	Golden Pennants
Daviesia genistifolia	Broom Bitter Pea
Acacia aspera	Rough Wattle
Acacia brachybotrya	Grey Mulga
Acacia genistifolia	Spreading Wattle
Acacia lanigera	Woolly Wattle
Acacia montana	Mallee Wattle
Acacia williamsonii	Whirrakee Wattle
Allocasuarina muelleriana	Slaty She Oak
Bursaria spinosa	Sweet Bursaria
Cassinia arcuata	Chinese Scrub
Cassinia uncata	Sticky Cassinia
Daviesia leptophylla	Narrow Leaf Bitter Pea
Daviesia ulicifolia	Gorse Bitter Pea
Dodonaea viscosa	Hop Bush
Grevillea alpina	Cats Claw
Hakea decurrens ssp. *physocarpa*	Bushy Needlewood
Leptospermum myrsinoides	Heath Tea Tree
Melaleuca decussata	Totem Poles
Melaleuca wilsonii	Violet Honey Myrtle
Olearia decurrens	Clammy Daisy Bush
Olearia teretifolia	Cypress Daisy Bush
Acacia implexa	Lightwood
Allocasuarina luehmanii	Buloke
Callitris glaucophylla	Murray Pine
Eucalyptus behriana	Bull Mallee
Eucalyptus froggattii	Kamarooka Mallee
Eucalyptus polybractea	Blue Mallee
Eucalyptus tricarpa	Red Ironbark
Eucalyptus viridis ssp *viridis*	Green Mallee

The next Garden Working Bee will be on **Wednesday, 7th November at 2pm.**
Please come and help us clean up the garden and remove weeds. Bring your own tools if you have any.

Adopt-a-Highway Program Highway Clean-up

Author: Matthew Comer

The next working bee to clean up the 'Seven Sisters' section of the Midland Highway outside Huntly, will be held on

Sunday 21st October.
The working bee will start at 10am.

We will meet at the truck parking area at the North end of the section. This end has not been cleaned in recent efforts, so it is a good starting point.
After the clean up, we will drive to the Kamarooka Forest, have lunch, and then see what wildflowers, birds etc. we can find.

Please bring your lunch and appropriate clothing for the day.
Gloves, bags and safety vests will be provided.

How much native vegetation is enough? Your help is needed!

Author; Jim Radford, Deakin University

Editor's note: for those who attended the AGM, Jim spoke to members briefly about this project. Here is a more extensive report as well as the map he promised he would provide.

How much native vegetation is necessary for the conservation of biodiversity in agricultural landscapes? This is the basic question being addressed in a new research project entitled "Landscape level thresholds for conservation of biodiversity in rural environments" that is coordinated by Dr. Andrew Bennett from the School of Ecology and Environment at Deakin University (Melbourne). The project aims to measure a variety of environmental variables that describe the amount, type and pattern of native vegetation, as well as measures of climate, biogeography, land-use and human disturbance, and relate these to biological data collected from extensive fauna surveys. The project, based in the temperate woodlands of central and northern Victorian, commenced in July will run until December 2004. Funding has been jointly provided by Land & Water, Australia's Native Vegetation Research and Development Program and the Victorian Department of Natural Resources and Environment.

The novel aspect of this research is the scale of investigation. We will be taking a landscape scale approach. Many previous research projects have focused at the patch level, and can provide us with a relatively good understanding about the influence of factors such as patch size, patch isolation, patch shape and habitat quality on species richness or the occurrence/abundance of particular species or groups of species. This has provided valuable insights for conservation and restoration on minimum area requirements for particular species, fragmentation effects and determinants of habitat quality, such as grazing intensity, extractive industries and fire regimes. However, this has left us with little understanding of processes and impacts at the landscape level; that is, how do species, communities and ecological processes respond to 'whole landscapes'?

What is a 'landscape'? From an ecological perspective, a landscape may be defined as 'a mosaic of a cluster of local ecosystems that is repeated in similar form over a kilometres wide area' (R. Forman (1995) *Land Mosaics*, Cambridge University Press; Pp. 39). Landscapes are large relative to the daily movements of local organisms. This introduces problems of scale when trying to interpret landscape effects on a range of organisms; for example, a landscape from the perspective of a dung beetle is very different to that of a superb fairy-wren, let alone an eastern grey kangaroo or a powerful owl. However, in general, research at a landscape scale takes a more holistic view. It considers remnants of native vegetation not as isolates but as part of a larger network of patches. Linkages between the remnants, should they exist, are integral to landscape research, as is the land surrounding native vegetation remnants, referred to as the 'matrix'.

This research hopes to shed new light on the way in which faunal groups (birds, terrestrial mammals, reptiles and arboreal mammals) respond to landscape-level change. We anticipate this will provide a better understanding of the relative importance of vegetation cover (i.e. how much) and pattern (i.e. how it is distributed) in the conservation of biodiversity at landscape scales. In turn, this enable a more informed basis for setting quantitative goals for the total extent and pattern of native vegetation to maintain or restore in the landscape. Thus, we may achieve a better understanding of the likely gains to be achieved by differing levels of restoration and more effective allocation of resources for conservation and restoration.

How can you help? The first phase of this research project will use data collected through the new Bird Atlas, which is administered by Birds Australia. Although Birds Australia has received millions of records during the past 3 years of 'Atlassing', the distribution of volunteer surveys has, understandably, been patchy. Consequently, there are many areas that are under-represented in the current Atlas database. Predictably, these areas are largely agricultural with little remaining native vegetation. These are precisely the landscapes we need to know about to make comparisons with landscapes with more extensive vegetation cover.

.....However, time is short to rectify this situation. The data collection phase of the new Atlas program is winding up and will cease at the end of the year.

.....Therefore, as you prepare for one final assault of Atlassing this spring, please consider helping not only our project, but the Atlas project in general, in three ways:

(1) Return any outstanding Atlas data sheets to Birds Australia

(2) Conduct some of your next Atlas surveys in landscapes that are predominantly rural – for example, small remnants in farmland that you may have previously not considered worthwhile.

(3) Specifically conduct surveys in the regions identified in the map below as under-represented.

Our preferred survey method is area searches within 500m but surveys of any type in poorly covered regions will contribute greatly to the quality of the database. I am happy to answer any further queries or direct people to specific locations if desired (please contact Jim Radford on 54437201). Have fun.

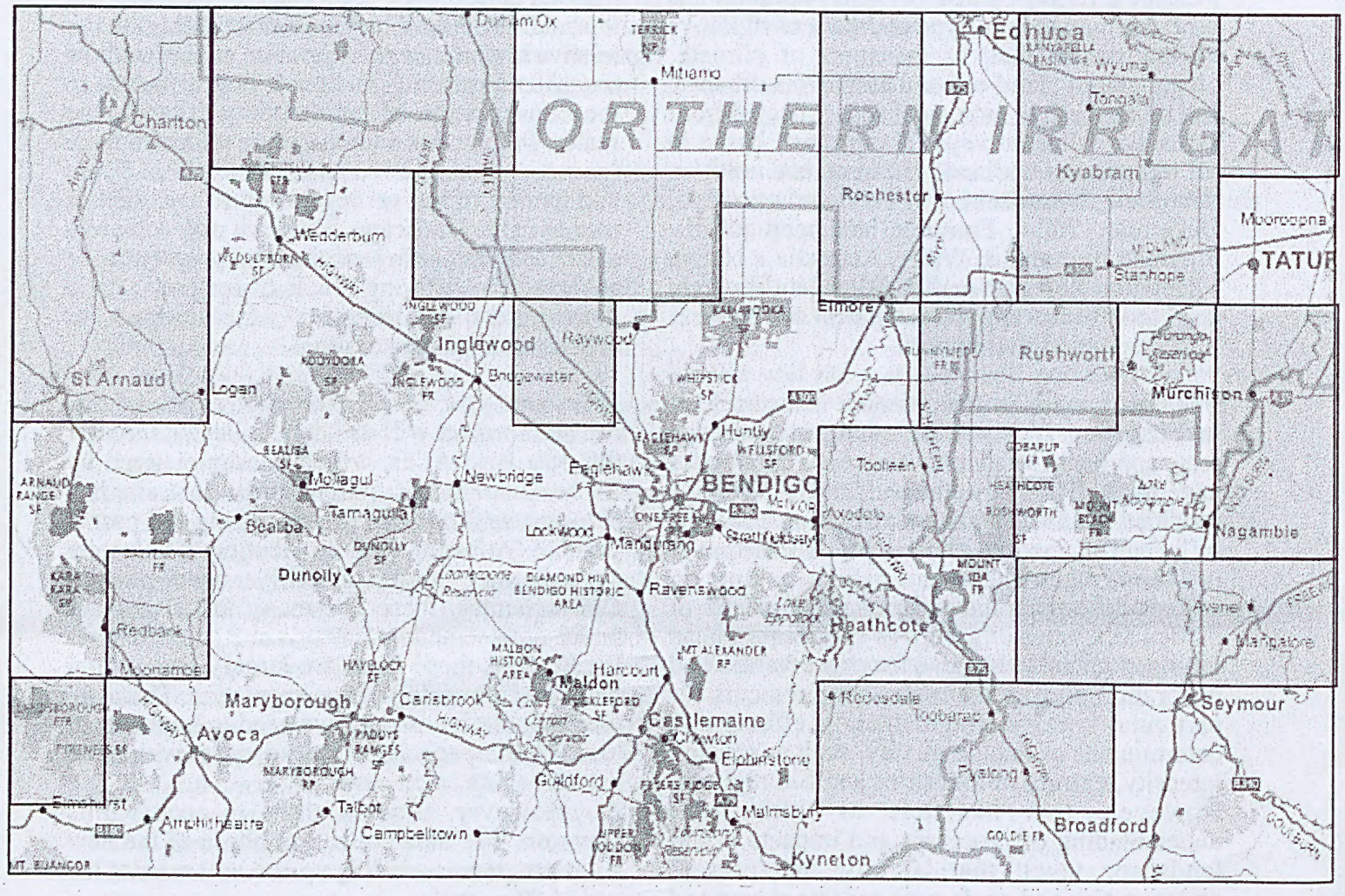


Figure 1. Areas within central Victoria that require additional Bird Atlas surveys. Areas within the shaded rectangles (which correspond to 10-minute latitude/longitude grid cells) are priority areas for surveying.

Wellsford Watch
An Action Group of the Bendigo & District Environment Council

Survey of Habitat Trees and Stumps of Coupe 05/151/003/0009 Wellsford State Forest, Bendigo Forest Management Area

Text by Jenny Shield, Tables and Figures by David Shield

Summary

A survey of 44 randomly-chosen 1 Ha plots in a sawlog coupe in the Wellsford State Forest undertaken in June to August, 2001 has shown that:

1. Fewer habitat trees are marked than required in the Prescriptions for the Bendigo Forest Management Area with a mean of 3.2 per Ha, instead of at least 6 per Ha prescribed, and 75% of quadrats had less than 6 habitat trees marked.

2. Few habitat trees in the size range 50-60 cm DBHOB are marked. Trees in this size range are being turned into sawlogs and hardly any trees were left to grow into the next larger size range. The survey of stumps shows that the 50-60 size class was well represented in the trees removed as sawlogs.

3. Habitat trees are unevenly distributed in the coupe. There are more habitat trees in quadrats near a road (mean 4.2) or race (mean 4.9) than those more than 100 m from a road or race (mean 1.9) and this difference is highly significant statistically.

Introduction

The Wellsford Forest was closed to heavy cutting since the 1970s because an unusually virulent form of Coarse Dodder Laurel *Cassytha melantha* kills coppice especially of red ironbark *Eucalyptus tricarpa*, preventing regeneration. This forest had unusually large trees for box-ironbark state forests because up till the beginning of the current cut it had been harvested only very lightly.

Nevertheless, systematic timber production has been taking place in the Wellsford State Forest for the past 4 years.

The Wellsford State Forest is part of the Bendigo Forest Management Area (FMA) and is subject to prescriptions (1) which determine how trees are to be retained for habitat. According to section 5.2.1 of the prescriptions, between six (6) and fourteen (14) living habitat trees per hectare are to be retained as follows: at least two large habitat trees (greater than or equal to 60 cm diameter at breast height over bark DBHOB), plus at least two medium habitat trees (less than 60 cm but greater than or equal to 40 cm DBHOB) and also at least two small habitat trees (less than 40 cm but greater than or equal to 20 cm DBHOB) if possible. Whenever there are less than two habitat trees present per hectare in the large size class then an additional two habitat trees are required in the medium size class for each one that is unavailable. This process is then repeated if necessary where there is also a shortage of medium size habitat trees by similarly increasing the number of small size habitat trees required by two for each medium size habitat tree that is unavailable.

We understand at this time (19 August 2001) that there is an agreement between NRE (Department of Natural Resources and Environment) Forest Management and NRE Flora and Fauna that habitat trees must be marked prior to harvesting in coupes designated in the WUP (Wood Utilisation Plan) for sawlogs, but not in coupes designated for posts, poles and firewood because only trees less than 40 cm DBHOB may be cut in a post, poles and firewood coupe.

The Wellsford Watch action group of BDEC with assistance from La Trobe Environment Action Forum (LEAF) and Students Concerned About the Regional Environment (SCARE) carried out this survey of a designated sawlog coupe in order to determine the density, distribution and size of marked habitat trees and the size of sawlogs removed.

Method

Coupe number 05/151/003/0009 was surveyed between June and August 2001. It was divided into 1 hectare quadrats and 44 were selected at random using a table of random numbers. The south-east corner of each quadrat was located using a GPS and its other corners were determined using a tape measure and a compass.

In each selected quadrat, the circumference at breast height and at stump height (15 cm from the ground) of all marked habitat trees was measured, and the diameter at breast height calculated.
Stumps remaining from felling were also measured.

Size classes: The habitat trees were divided into size classes (diameter at breast height in cm): of less that 20 cm, greater than 80 cm, and at 5 cm intervals in between.

Distribution:

i. Frequency distribution: The frequency distribution of number of habitat trees in the quadrat was plotted and compared with the theoretical (Poisson) frequency distribution if the habitat trees were distributed at random with the minimum required average density of 6 trees per hectare if trees in all size classes are available.

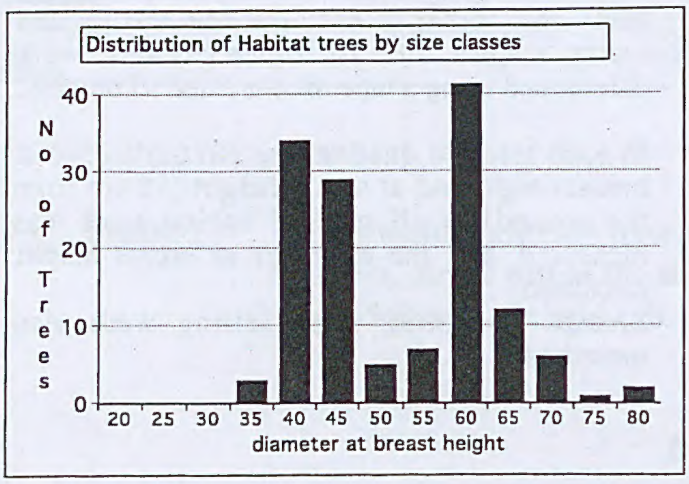
ii. Source of uneven distribution: Each quadrat was classified according to whether or not it adjoined a road or a channel (race). The mean number of habitat trees for those adjoining a road, those adjoining a race and those not adjoining a race or road were compared. Note that some quadrats adjoined both road and race.

iii. Size distribution of stumps: For each of the three species Grey box, Ironbark and Yellow gum separately, data from habitat trees was used in a linear regression model to relate diameter at breast height with circumference at stump height and this data was used to estimate diameter at breast height for each stump.

Results

1. Number of habitat trees per Ha is less 6.
33 quadrats out of 44 sampled, i.e. 75% had less than 6 habitat trees marked. There was a mean of 3.23 habitat trees per Ha for the area sampled.

2. Few habitat trees in the size range <50-60 cm DBHOB were marked.
The Figure of *Distribution of Habitat Trees by size classes* and the following table show that very few trees in the <40 cm size class were marked, in the 40 to 60 size class, most of the trees were in the lower half of the size range, as were the 60 to 80 size range:



Frequency Distribution of Habitat Tree Size Classes

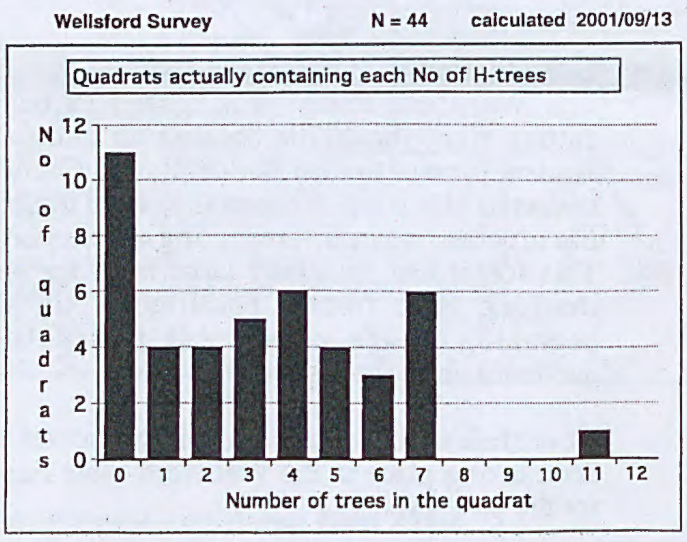
Diameter at breast height (cm)	No. of habitat trees in 1 Ha quadrats
20-25	0
25-30	0
30-35	0
35-40	2
40-45	30
45-50	25
50-55	5
55-60	6
60-65	38
55-70	12
70-75	6
75-80	1
80	2

Of the 2 trees larger than 80 cm, both were less than 80 cm at stump height, one branched into 2 stems above breast height, the other was unusually swollen at breast height.

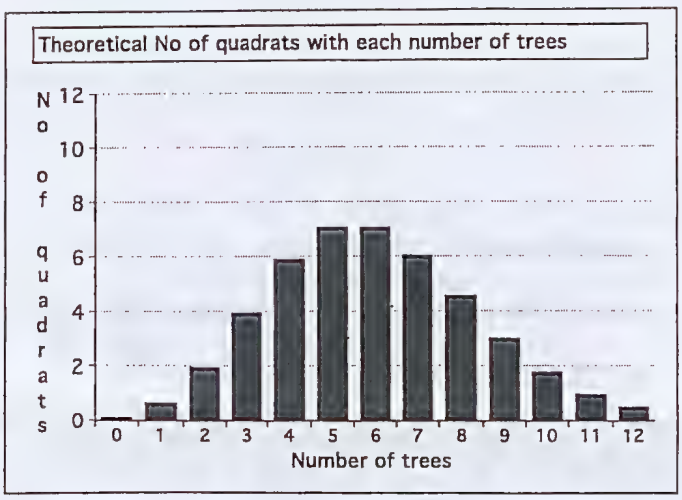
Spatial distribution of habitat trees:

i. Habitat trees are unevenly distributed in the coupe

The bar graph of *Quadrats actually containing each No of H-trees* shows that 11 quadrats had 0 habitat trees marked and there were 1 to 7 trees in approximately equal numbers of quadrats. Of course, if the distribution were uniform rather than random, there would be at least 6 marked habitat trees in each quadrat.



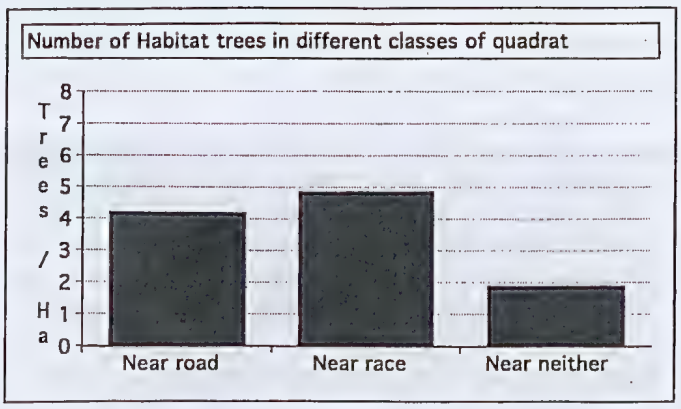
The bar graph *Theoretical No. of quadrats with each number of trees, assuming minimum number and random distribution* shows that most quadrats should have between 3 and 9 marked habitat trees.



ii. There are more habitat trees in quadrats near a road or race:

The *Habitat Tree by Quadrat* bar graph shows that quadrats near roads and the channel (race) had more habitat trees than quadrats 100 m or more from a road or race (interior). These differences are highly significant as shown below:

Wellsford Survey N = 44 calculated 2001/09/13



Mean number of habitat trees for 23 quadrats near roads: 4.2
Mean number of habitat trees for 7 quadrats near channel: 4.9
Mean number of habitat trees for 20 quadrats not near road or channel: 1.9

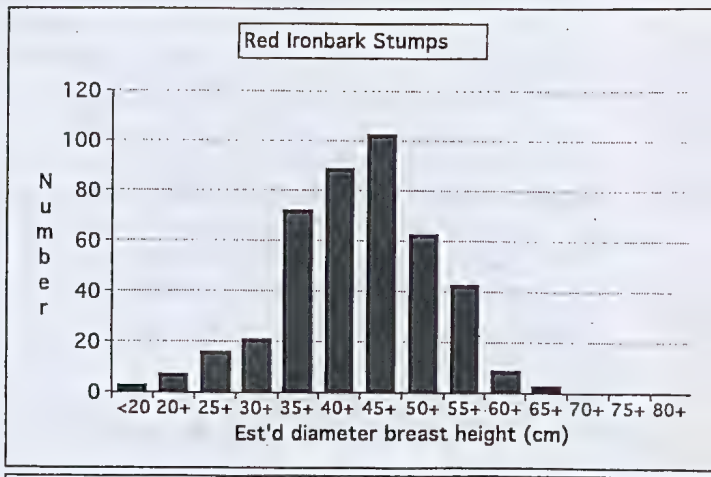
Summary of Statistical Analysis for 1-tailed paired t test

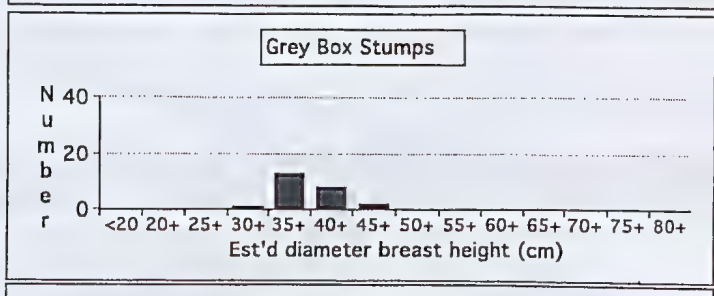
Comparison	s2	s	t	df	p
road/race	0.519	0.719	0.890	28	n.s.
road/interior	0.295	0.543	4.267	41	<0.001
race/interior	0.392	0.626	4.726	25	<0.001

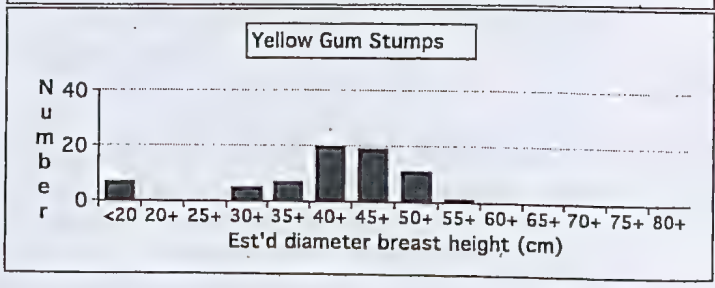
s = sample standard deviation, t = Student t statistic, df = degrees of freedom, p = probability.

Stumps

The frequency distribution of estimated diameter at breast height of trees already felled, based on stump measurement, is shown on the accompanying charts: *GREYBOX Stumps*, *IRONBARK Stumps* and *YELLOW GUM Stumps*. This shows that the 50-60 cm range was well represented in the original population of Ironbarks and Yellow gums before felling occurred.







The standard error of these estimates was also calculated:

Species	Standard Error
Grey box	+/- 3.9 cm
Ironbark	+/- 5.0 cm
Yellow gum	+/- 3.5 cm

Because of these possible errors (since not all trees of a given species have exactly the same relationship between circumference at stump height and diameter at breast height) some stumps will have been mis-allocated on the charts. The probability of this occurring is show in in the following table:

Probability of Error in Allocating Stumps to Size Classes

	2 Classes smaller	1 class smaller	correct class	1 class larger	2 classes larger
Grey box	2.7%	23.4%	47.8%	23.4%	2.7%
Ironbark	6.6%	24.2%	38.4%	24.2%	6.6%
Yellow gum	1.6%	22.1%	52.6%	22.1%	1.6%

Thus while many trees are allocated to an adjacent class, very few are mis-allocated by more than one class.
The overall effect of these errors is a slight smoothing of the distribution curve of estimated diameter at breast height for felled trees. However, the smoothing effect is not great.

It is clear that in the 50-60 cm size range, a disproportionate amount of felling has occurred. 20.5% of all felled trees (in fact, 25% of felled ironbarks) but only 6.5% of trees marked for preservation as habitat trees, were in this size range.

Discussion

The Forestry Prescriptions for the Bendigo FMA state that at least 2 habitat trees in each of the size classes (20-40, 40-60, and 60-80) per hectare must be retained. If there are insufficient trees in the larger size classes, double the number of trees in the next smaller size class must be retained (i.e. 14/Ha would be retained if there were no trees ≥40 cm diameter at breast height).

The distribution of size classes shows that there were only 3 marked trees in the 20-40 size class.

In addition, most of the marked habitat trees in the larger size classes are in the lower end of each size class. This gives the opportunity for the trees to be cut at the next round of harvesting when they might be in the upper end of the size class. The forestry prescriptions indicate that all trees with a diameter ≥80 cm must be retained. Forestry practices to date have not allowed any regrowth trees to become ≥80 cm. The results of this survey indicate that unless the prescriptions are changed so that habitat trees are required to be retained permanently, this forest may continue to lose its largest trees to wood harvesting.

A survey of stumps remaining after harvesting in the same quadrats surveyed for habitat trees show that trees between 50 to 60 cm DBHOB were available for retention as habitat trees, but there were no stumps from trees 70 cm to 80 cm DBHOB.

Further, it appears that trees with hollows, the most valuable for fauna habitat, are being systematically removed from the coupe area. (Possibly they are regarded by timber producers as "diseased".) Several felled trees with hollows reaching right from the base were observed lying on the ground. However, a systematic investigation of hollow trees remaining was not carried out.

The analysis of distribution of marked habitat trees shows that the distribution is uneven, and that there are more marked habitat trees in quadrats adjoining roads than in those that do not adjoin road or channel and still more marked habitat trees in the vicinity of the channel. No attempt was made to separate out the influence of road and channel together. 6 of the 7 quadrats near channel were also near a road.
Clustered distribution of habitat trees would support fewer fauna than if the habitat trees were randomly distributed.

Reference

(1) *Management Prescriptions for the Control of Timber Harvesting in Native Forests within the Bendigo Forest Management Area.* Department of Natural Resources and Environment North West Region, 1997.

Report from the Annual General Meeting

The Annual General Meeting was a treat. Rod Orr showed us the first instalment of slides by Rob and Cynthia Watkins of the flowers in the BFNC garden. This set will be added to in order to build up a complete set of our indigenous garden plants. There were several wattles (beautifully photographed), Whirrakee, Rough and Golddust, Bendigo Wax, Callitris Pine, Hakea, Scarlet Mint Bush, Grevillea, *Allocasuarina muelleraina*, Correa, Cut-leaf Daisy, Sticky and Clustered Everlasting, Pimelea, *Pelargonium australe* and *P. rodneyanum*, Diggers Speedwell, Totem Poles, Violet Honey Myrtle, Sweet Bursaria, Sarsparilla and Creeping Boobiella.
The photos highlighted one of the problems encountered when trying to establish an indigenous garden. Many of the plants purchased at commercial nurseries are not the true local type and this may not be detected till years after planting. Several of the plants in our garden are not truly indigenous and will, over time, be replaced by the correct variety.

Barbara, in her role as president, then had free reigns to tell us about a topic of her choice. She chose to talk about the beginnings of her love of the bush and, in particular, the origin of her interest in choughs. They are a very interesting group of birds and I will definitely stop longer to watch them next time I come across them. Watching them build a nest must be particularly fascinating.

Bill Holsworth delivered his Annual Report (see below) and Glenise Moors delivered the Treasurer's Report both of which were accepted. Unfortunately we have run out of room in this edition and the Treasurer's Report will be printed in the next *Whirrakee*.
Thanks to all who attended.

Bendigo Field Naturalists Club Inc. Annual Report 2000-01 - by Dr. W. N. Holsworth, Secretary

---

This is our 56th year as a Club. Our interest in the native flora and fauna of central Victoria has become more intense as the threats to the environment have become better known and better appreciated. The willingness of State and Local Governments to listen to our concerns, and indeed to ask for our consideration of environmental situations, has increased our potential to make a difference. During the year the Club has been represented on several government committees. As a Club we have worked closely with other local and statewide environment groups. Also, many members, as individuals, have contributed to important conservation issues.

During the year at meetings and excursions we have enjoyed the companionship of like-minded naturalists. We have all been saddened by the death, in October, of Tom Patullo. Tom was a life member, past president, founder of the 'Bendigo Naturalists' publication, regular contributor to the 'Whirrakee', orchid growing expert, and much more. Tom was buried underneath the gum trees in Bendigo Cemetery. We also mourned the death of John Guley in January. John was an enthusiastic participant in all Club activities. He contributed to the discussions of the bird and mammal group meetings, worked in the indigenous plant garden and came regularly to the general meetings.

During the past year the Club held 9 monthly meetings with guest speakers, in February we had a seminar on research and conservation projects being undertaken by members, and in December the Christmas dinner party. Guest speakers covered topics ranging from microscopic animals to landscape management, and included frogs, flowers, birds and snails. Most lectures were summarised by Sabine Wilkens and published in the Whirrakee. Sabine also edited the 11 issues of the 'Whirrakee' and Ian Flecknoe-Brown provided most of the cover photos.

A new format for our evening meetings was tested this year. A 50 minute workshop session started at 7:00pm, and the guest speaker started at 8:00pm. Workshops on insects, grass, birds, bones and turtles were all well attended. Members should express their preferences for this activity. The committee would like to know if it should be lengthened in time, made more frequent, replace some of the lecture evenings, or be added to an expanded program.

Major activity groups of the Club.
Six years ago we moved into our present Club rooms in the Golden Square Senior Citizens Hall as the Committee of Management. One of our requests to the City was that we be allowed to develop a garden around the hall. **The Garden Group** was formed to develop an Indigenous Plant Garden. Several working bees were organised again this year to mulch, plant,

prune and weed the garden. This year we started Phase 5 and planted about 500 plants to extend the garden to the Fire Station fence. The co-operation of the Bendigo Native Plant Group in establishing the garden, and their help during our working bees, is greatly appreciated. (Several members of the Bendigo Native Plant Group are also members of the Club.)

The Garden Group was also active in the design and development of the Campaspe Run Koori Garden at Elmore and continues to assist with its development and maintenance.
The Club takes an active part in organising the Spring in the Bendigo Bush program, including the presentation of the Wildflower Show jointly with the Bendigo Native Plant Group.

The **Mammal Study Group** has been very active again this year, in putting up many nest boxes for mammals, and checking their use in Spring Gully and Diamond Hill. A separate annual report of the Group is in this month's Whirrakee.

The **Bird Study Group** has been very busy helping to compile records for the revised Bird Atlas. They will also be reporting separately.

Small groups of Committee members and ordinary members coordinate other Club activities.
Adopt-a-Highway Volunteers regularly remove the rubbish from a section of the Northern Highway north of Huntly.
Hall Committee acts as the Committee of Management and consults with the City of Greater Bendigo and the Golden Square Senior Citizens Club.
Syllabus Committee organises the meeting program for the year and prepares Club publicity pamphlets.
Whirrakee Committee edits and produces the monthly newsmagazine, maintains the mailing list, and mails or distributes the magazine.

The Club is involved with several long-term projects, either on its own account or in cooperation with other groups or government agencies. These projects are:
• Habitat Protection for the Pink-tailed Worm Lizard -Threatened Species Network Community Grant (WWF) - with Dept. NRE.
• Adopt a Highway - rubbish removal along the Seven Sisters (Whirrakee Wattle) stretch of the Midland Highway - with Vic Roads.
• Native Garden at Golden Square Hall - Natural Heritage Trust funds through the City of Greater Bendigo.
• Robert Allen Herbarium Collection - initial funding by the Club, the City of Greater Bendigo and La Trobe University (Bendigo).
• Mammal Nest Boxes for Endangered species in Mandurang and Torumbarry Weir - with funding assistance from Dept. NRE and North Central Catchment Management Authority.
• Bird Atlas Data Collection in cooperation with Birds Australia and Dept. NRE.

On the Environment protection front the Club made seven submissions or objections. These were:
• Objection to Grant of Planning Permit for, "Native Vegetation Removal on McGlashans Road Reserve", to City of Greater Bendigo.
• Perseverance Exploration Pty Ltd - Objection to application for an exploration licence, to Dept. Minerals and Petroleum.
• Submission on, "Proposed Mid-Murray Forest Management Plan Draft Report Jan. 2001", to Dept. NRE
• Submission on, "A National Approach to Firewood Collection and Use", to Environment Australia (jointly with BDEC).
• Submission on, "Natural Environment Management Strategy", to City of Greater Bendigo.
• Submission on, "Draft Native Vegetation Management Plans", to Dept. NRE.
• Submission on, "Hume Freeway - Craigieburn Bypass", to Dept. Infrastructure (jointly with BDEC).

Representation on Local and Regional Committees

Over the years the Club has achieved a reputation for giving informed advice and an environmental friendly perspective on natural resource planning and management. As a result we are represented on several Local and Regional government committees. The Club is also represented on several community based "Friends" groups.
These committees are:
Spring Gully Creek Reserve Management Plan
Spring in the Bendigo Bush Program 2001
Summer in the Parks 2001
Municipal Fire Prevention Committee
Friends of Tang Tang Committee
Friends of Bendigo Botanic Gardens Committee
Friends of Kennington Reservoir and Parklands Committee
Friends of the Box-Ironbark Forests
Bendigo National Parks Group
Friends of Kooyoora State Park

...continued on page 14

.....Annual report continued.....

Concluding Remarks

The Club's successes on the social, educational and political fronts are not achieved without a lot of diligent members. Many members willingly give their time and expertise to assist the Club. We hope that this involvement will continue to increase and the Club will attain even better results in the future.

Bendigo Field Naturalists Club Inc.

Speaker Syllabus for General Meetings 2001– Second Wednesday 8:00 pm

Please check each **WHIRRAKEE** for additional events or changes. If a workshop is planned, it will start at 7:00pm. The speaker will be introduced at 8:00 pm.

Date - 2001	Topic	Speaker
	Please note that the October and November speakers have changed places	
10 October	**The Landscape Approach to Biodiversity**	**Geoff Park,** North Central Catchment Management Authority
14 November	**Wildlife Shelters and Wildlife Rescue**	**Garry Cheers, Wildlife Rescue and Information Network Inc.**
12 December	**Christmas Dinner** At the Hall, Bring Salad, Casserole or Dessert. Come early, to sit down at 6:30, and visit with friends for as long as you like.	

VFNCA 2001 Spring Campout **The Grampians 26th - 30th October 2001**
hosted by the Ararat and District Field Naturalists Club and based at Camp Acacia in Halls Gap. The camp has been booked from Friday 26th until Tuesday 30th October.
For those interested, more detailed information about this camp was in the July *Whirrakee* (page3/4) and a booking form was included in the August edition.
All payment must be made by Friday, 7th September. Any cancellation after 1st October will incur a fee of $20.
Send booking forms to: Joan Pitaro 25 George Road Ararat 3377 ph 03 53523632

VFNCA 2002 March Camp **Volcanoes and Mineral Springs of Central Victoria**
The first circular for this camp has been received. The dates are 8-11th March 2002 and the camp is held at the Campaspe Downs Country Resort and hosted by the Field Naturalists Club of Victoria. Due to space restrictions in this edition, the details remain a surprise, but if you are keen to know more now, ring Sabine Wilkens on 54 432797 (ah) or 54 447370 (bh) to get a copy of the circular. Registration is due on November 19 (cost 178.00 incl. Meals), so you can start saving .....

Diary

The General, Bird Observers Group and Mammal Survey Group meetings are held at the Golden Square Senior Citizens Building, Old High Street, Golden Square, unless otherwise indicated.

General Meeting

Wednesday, October 10
7.00pm. This month we will have a workshop on spiders conducted by Jenny Shield, Honorary Associate, LaTrobe University, Bendigo.
8.00pm ....*note: change of speaker.....*
The speaker in October will now be Geoff Park from the North Central Catchment Management Authority and the topic will be "The Landscape Approach to Biodiversity"

Wednesday, November, 14
7.00pm. In November Jane Cleary will conduct a workshop on the 'Anatomy of a Flower'. Bring a large flower and a hand lens.
8.00pm Gary Cheers from W.R.I.N. will talk about 'Wildlife Shelters and Wildlife Rescue'.

Excursions

Friday 12th October
Meet 10.00am Shadbolt picnic area, Whipstick State Park for informal, leisurely walk through the bush and BYO cuppa for afterwards. There'll be plenty to see and talk about. For details ring John Green 54436756.

Sunday 28th October
Meet 11.00am at lower carpark Kooyoora State Park (Melvilles Caves). Leisurely walk around the foothills of the granite outcrops. BYO (barbeque) lunch and cuppa. There should be plenty of wildflowers to see. For details ring John Green 54436756.

Bird Observer Group

Bird Observer Group
Sat October 27.... Meet at 8.30am at Spring Gully Hall Car Park
The suburban forest fringe provides excellent foraging opportunities for a variety of small and large birds. Some nesting sightings are expected to be found at favourite birding spots, within comfortable walking distance.
Bring morning tea.
Contact Bev Brooks on 5442 2990.

Bird Observers Group continued.....

Sunday November 11
Bullock Creek
Meet 9am - in Lockwood Road, Kangaroo Flat lights (carpool)
or 9:30am - Lockwood Picnic/Sports Reserve (car shuffle)
The locals are enthusiastic about the bird life along Bullock Creek, and are keen to share it with us. We will have access through private property along the creek for a couple of kilometres. The walk will finish at the Picnic/Sports Reserve where people will be able to utilize the BBQ and continue bird watching and chatting.
Junior birdos welcome.
Contact Kerrie Norris 54478017.

Picnic in the Wellsford Forest
Sunday, 4th November
at Maher's Dam off Plant Road, between 10am. and 4pm. BBQ sausages, bread, salad, tea coffee, milk will be provided.
Bring your own cup, hot water, drinks and any extra food needed.
Wellsford Watch will conduct tours at 11am, 2pm, 3pm
Lunch will be between 12noon and 2pm.
All welcome.

Garden Working Bee
The next Garden Working Bee will be on **Wednesday, 7th November at 2pm.**
Please come and help us clean up the garden and remove weeds. Bring your own tools if you have any.

Clean up of Clubrooms
This yearly (very social) event will be on **Saturday, 15th December, starting at 9am.**
Please bring gloves rags and dusters and what ever else you think will be needed

The Box - Ironbark Rally Camp
October 6 and 7
Paddy's Ranges Maryborough

see page 10 of *July Whirrakee* for details.
If interested contact Kerrie Norris ph. 54478017